

II. Process Safety Information Program
Nevada Division of Environmental Protection
Chemical Accident Prevention Program
Element Audit Checklist

Revision 5, 02/03/2016



Facility:		Process(es) Covered:		HHS(s):	
Completion Score History	Date	Part A Score	Part B Score		
	xx/xx/xxxx	xx%	xx%		
A. PROCEDURE/POLICY REVIEW					
Documents Reviewed					
Date Reviewed	Title of Document	Rev. #	Date	# Pgs.	
1) INFORMATION PERTAINING TO HAZARDS OF SUBSTANCES			NAC Ref.	Resp. Code	
<i>Item #1 Completion Score – Weighted 10% of Part A</i>			$x / 2 = \mathbf{xx}\%$		
i.	Are material safety data sheets (MSDS) or other substance hazard information on site for all highly hazardous substances and explosives?		459.95412(2a)		
ii.	Does the hazard information include all relevant hazard information (refer to MSDS Summary Form)?		459.95412(2a)		
Notes/Comments Pertaining to Responses to Questions under Issue 1):					
2) INFORMATION PERTAINING TO THE TECHNOLOGY OF THE PROCESS			NAC Ref.	Resp. Code	
<i>Item #2 Completion Score – Weighted 20% of Part A</i>			$x / 5 = \mathbf{xx}\%$		
i.	Has a block flow or simplified Process Flow Diagram been developed?		459.95412(2b1)		
ii.	Does a Process Chemistry description exist for current process and does it include the applicable items noted in questions a through d below?		459.95412(2b2)		
	a. Describe chemical reactions for primary & secondary reactions?		459.95412(2b2)		
	b. Describe the type and nature of catalysts used?		459.95412(2b2)		

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c. Describe competing side reactions?		459.95412(2b2)	
d. Describe undesirable chemical reactions such as decompositions and auto polymerizations?		459.95412(2b2)	
iii. Is the maximum intended onsite inventory defined?		459.95412(2b3)	
iv. Are Safe Limits for process variable(s), along with the basis, defined and consistent with design criteria defined in section 4 for variables a through g below?		459.95412(2b4)	
a. Pressures		459.95412(2b4)	
b. Temperatures		459.95412(2b4)	
c. Flows		459.95412(2b4)	
d. Stream Composition Limits		459.95412(2b4)	
e. Minimum Pipe and Vessel Wall Thickness		459.95412(2b4)	
f. Rotating Equipment Tolerances, Such as Vibration Limits		459.95412(2b4)	
g. Other Process Mechanical Limit(s)		459.95412(2b4)	
v. Have the Consequences of Deviating outside the variable(s) limits been evaluated for variables a through g below?		459.95412(2b5)	
a. Pressures		459.95412(2b5)	
b. Temperatures		459.95412(2b5)	
c. Flows		459.95412(2b5)	
d. Stream Composition Limits		459.95412(2b5)	
e. Minimum Pipe and Vessel Wall Thickness		459.95412(2b5)	

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f. Rotating Equipment Tolerances, Such as Vibration Limits		459.95412(2b5)	
g. Other Process Mechanical Limit(s)		459.95412(2b5)	
Notes/Comments Pertaining to Responses to Questions under Issue 2):			
3) INFORMATION RELATED TO THE EQUIPMENT OF THE PROCESS		NAC Ref.	Resp. Code
<i>Item #3 Completion Score – Weighted 30% of Part A</i>		$x / 25 = xx\%$	
i. Have comprehensive equipment and piping design information been developed?		459.95412(2c1)	
ii. Have equipment & piping materials been evaluated for compatibility with process fluids?		459.95412(3&4)	
iii. Have design parameters (e.g., temperature, pressure, etc.) been defined for equipment and piping; and is the equipment and piping capable of handling the maximum and minimum process conditions?		459.95412(3&4)	
iv. Have comprehensive instrument design information been developed?		459.95412(2c1)	
v. Have instruments been evaluated for compatibility with process fluids?		459.95412(3&4)	
vi. Have design parameters (e.g., temperature, pressure, etc.) been defined for instruments, and are instruments capable of handling the maximum and minimum process conditions?		459.95412(3&4)	
vii. Do Piping & Instrument Diagrams (P&IDs) cover the entire regulated process, including process auxiliary systems and utilities?		459.95412(2c2)	
viii. Do P&IDs contain all process equipment and piping?		459.95412(2c2)	
ix. Do P&IDs contain all instrumentation?		459.95412(2c2)	
x. Is control logic readily evident from the P&ID, or if not, is control logic documented in a separate format such as ladder logic diagrams, wiring schematics, SAFE charts?		459.95412(2c2)	
xi. Has P&ID and control logic accuracy been confirmed by the facility?		459.95412(2c2)	
xii. Have Electrically Hazardous Areas, defined pursuant to Article 500 of the National Electric Code, been defined?		459.95412(2c3)	

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xiii.	Have all electrical components & equipment within defined Electrically Hazardous Areas been evaluated for compatibility with the electrical classification, and found to be compatible?	459.95412(3&4)	
xiv.	Have control rooms and other buildings within Electrically Hazardous Areas been evaluated for compatibility with the electrical classification and found to be compatible?	459.95412(3&4)	
xv.	Have all Pressure Relief Devices been listed with the following information from the actual valve: set pressure and capacity @ defined overpressure (taken from valve nameplate or from vendor data traceable to the valve)?	459.95412(2c4)	
xvi.	Have required relief pressures, rates and sizing basis (e.g., process upset, fire or thermal relief) been determined for each corresponding Pressure Relief Device listed in xv above?	459.95412(3&4)	
xvii.	Have actual Pressure Relief Device pressure settings and capacities been determined to be adequate?	459.95412(3&4)	
xviii.	Has the capacity of pressure relief headers and associated flares or scrubbers been evaluated for adequacy, and has the capacity been determined to be adequate?	459.95412(3&4)	
xix.	For regulated processes enclosed by a building, has the capacity of the Mechanical Ventilation Systems been determined?	459.95412(2c5)	
xx.	Has the required capacity of the building Ventilation System, as required by the Uniform Fire Code, or other relevant and more conservative codes, been evaluated?	459.95412(3&4)	
xxi.	Is there documentation verifying that the building Ventilation System configuration and capacity are adequate?	459.95412(3&4)	
xxii.	If building Ventilation System includes a scrubber for toxic or highly toxic compressed gases, does it meet requirements of Uniform Fire Code, Article 80 (section 8003.3.1.3.5) or other nationally recognized code?	459.95412(3&4)	
xxiii.	Does the building Ventilation System meet Uniform Fire Code requirements or other nationally recognized code?	459.95412(3&4)	
xxiv.	Do Heat & Material Balances exist for the regulated process (not mandatory if the process was built before May 26, 1992)?	459.95412(2c7)	
xxv.	Do Heat & Material Balances show, at a minimum: stream pressure, temperature, composition (including minor concentrations of toxics and corrosives), physical properties (e.g., as molecular weight, density, viscosity, etc.), and thermodynamic properties?	459.95412(2c7)	
Notes/Comments Pertaining to Responses to Questions under Issue 3):			
4)	DESCRIPTION OF SAFETY SYSTEMS AND THEIR FUNCTIONS	NAC Ref.	Resp. Code
<i>Item #4 Completion Score – Weighted 10% of Part A</i>		x / 1 = xx%	
i.	Has a Safety System Description, SSD, been developed and does it include the applicable systems noted in questions 1 through 11 below?	459.95412(2c8)	

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a.	If process is covered by an Emergency Shut-Down System, is it discussed in the SSD?	459.95412(2c8)	
b.	If the process area has Toxic Gas Sensors, are they discussed in the SSD?	459.95412(2c8)	
c.	If the process area has Combustible Gas Sensors, are they discussed in the SSD?	459.95412(2c8)	
d.	If the process area has Flame Detectors, are they discussed in the SSD?	459.95412(2c8)	
e.	If the process has a Firewater System, is it discussed in the SSD?	459.95412(2c8)	
f.	If the process has an Emergency Generator, is it discussed in the SSD?	459.95412(2c8)	
g.	If the process has an Uninterruptible Power Supply, UPS, is it discussed in the SSD?	459.95412(2c8)	
h.	If the process has a Flare System, Incinerator or Vent Scrubber, is it discussed in the SSD?	459.95412(2c8)	
i.	If there are audible or visual Alarms, are they discussed in the SSD?	459.95412(2c8)	
j.	If the process has an associated building Ventilation System, is it discussed in the SSD?	459.95412(2c8)	
k.	Are there other safety systems (list below)? If so, are they discussed in the SSD?	459.95412(2c8)	
Notes/Comments Pertaining to Responses to Questions under Issue 4):			
5)	EVALUATION OF CODE APPLICABILITY AND COMPLIANCE	NAC Ref.	Resp. Code
<i>Item #5 Completion Score – Weighted 20% of Part A</i>		x / 3 = xx%	
i.	Have applicable codes, specifications, and/or best engineering practices been defined by the facility (refer to PSI data forms)?	459.95412(2c6)	
ii.	Has compliance been evaluated with codes, specifications, and/or best engineering practices by the facility (refer to PSI data forms)?	459.95412(3&4)	
iii.	Have deficiencies with codes, specifications, and/or best engineering practices been corrected?	459.95412(3&4)	

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Notes/Comments Pertaining to Responses to Questions under Issue 5):			
6) MANAGEMENT PLAN AND DOCUMENT CONTROL		NAC Ref.	Resp. Code
<i>Item #6 Completion Score – Weighted 10% of Part A</i>		$x / 2 = \mathbf{xx}\%$	
i.	Is there a site-specific plan that addresses how the PSI requirements will be developed and maintained, and does it include applicable portions of items a through f below?	459.95341	
a.	Document the names of person(s) who are members of the team with overall responsibility for the development, implementation and integration of the Process Safety Information Program Requirements?	459.95341	
b.	Has the facility documented how the PSI for the hazards of the highly hazardous substances or explosives will be compiled?	459.95341	
c.	Has the facility documented how the PSI for the technology of the process will be compiled?	459.95341	
d.	Has the facility documented how the PSI for the equipment of the process will be compiled?	459.95341	
e.	Has the facility documented how processes and equipment will be evaluated for conformance to applicable codes, standards and good engineering practices?	459.95341	
f.	Has the facility documented how processes and equipment will be documented that they comply with recognized and generally accepted good engineering practices?	459.95341	
ii.	Is there a site-specific policy or procedure that addresses how PSI documentation is controlled to ensure that the most current information is in circulation and use?	459.95341	
Notes/Comments Pertaining to Responses to Questions under Issue 6):			
General On-Site Inspection Notes/Comments:			



B. ON-SITE INSPECTION - RECORDS AUDIT				
1) VERIFY THAT PSI IS ONSITE, ACCESSIBLE AND CURRENT			NAC Ref.	Resp. Code
<i>Item #1 Completion Score – Weighted 25% of Part B</i>			$x / 5 = \mathbf{xx}\%$	
i.	Are MSDS sheets or hazardous substance information on site and available to employees?		459.95412	
ii.	Are block flow or process flow diagrams, and process chemistry available to employees?		459.95412	
iii.	Are P&IDs available to employees?		459.95412	
iv.	Are piping, equipment and instrument specifications available to employees that must use them?		459.95412	
v.	Is electrical hazardous area classification information available to employees that must use the information?		459.95412	
Notes/Comments Pertaining to Responses to Questions under Issue 1):				
2) SELECT AT LEAST ONE P&ID FOR FIELD VERIFICATION <i>List Selected P&ID(s) on the Following Table:</i>			NAC Ref.	459.95412
<i>Item #2 Completion Score – Weighted 50% of Part B</i>			$x / 4 = \mathbf{xx}\%$	
#	P&ID NUMBER	DRAWING TITLE	Revision	Revision Date
i				
ii				
iii				
iv				
Inquiry/Observation			Response Code:	

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(Highlight items on P&ID as they are verified in field)	i	ii	iii	iv
a. Do the piping and piping components match the drawing?				
b. Does a spot check of flanges, fittings and valves indicate conformance to piping specifications?				
c. Do the pressure vessels, pumps, compressors, heat exchangers and other equipment match the drawing?				
d. Does spot check of pressure vessels, pumps, compressors, heat exchangers and other equipment indicate conformance to equipment specifications?				
e. Do instruments match the drawing?				
f. Based on Response Codes used to complete items 'a' through 'e' above, do representative P&IDs appear to be accurate?				
Notes/Comments Pertaining to Responses to Questions under Issue 2):				
3) VERIFY OTHER PSI INFORMATION	NAC Ref.			Resp. Code
<i>Item #3 Completion Score – Weighted 25% of Part B</i>	$x / 3 = \mathbf{xx}\%$			
i. From a spot check of electrical components (such as motors, enclosures and instruments) in electrically hazardous locations, does it appear that the components comply with the area classification?	459.95412			
ii. From a field review of the systems in the Safety System Description, does the description appear to be accurate and complete based on review of Process Flow Diagram, P&ID and on-site inspection?	459.95412			
iii. From the field review, does the PFD appear to be accurate and complete based on review of P&ID and on-site inspection?	459.95412			
Notes/Comments Pertaining to Responses to Questions under Issue 3):				
General On-Site Inspection Notes/Comments:				